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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,242	10/03/2003	Peter Kochersperger	1857.2060000	9116

26111 7590 03/22/2007  
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.  
1100 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER
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KIM, PETER B

ART UNIT	PAPER NUMBER
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2851

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/677,242

Applicant(s)

KOCHERSPERGER, PETER

Examiner

Peter B. Kim

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 10, 12-15, 18-22 and 25 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 8, 9, 11, 16, 17, 23, 24 and 26-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: ____.  |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :0516/05, 0531/05, 0110/06, 0821/06.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 7, 10-15, 18, 20-22, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Jain (2004/0130561).

Jain discloses a method of correcting an aberration in a maskless lithography system and a maskless lithography system (Fig. 1), comprising an illumination source (1), a spatial light modulator (SLM) array (5 and 6) having a plurality of SLMs (the abstract) (where SLM is defined as containing  $n \times m$  array of pixels in para 0038 of the instant application), the each attached to a respective adjuster (para 0023, 0024), an optics system (3, 7) to condition the light, and an image plane (8) to receive the light wherein each adjuster moves and changes the elevation of a respective SLM as needed to correct for an optical aberration in the light received by the object, such that a surface of the SLM array deviates from a flat plane (Fig. 1, ref. 5 and 6, although Jain does not explicitly disclose an adjuster, such device is needed in order to overlap the SLMs). Jain discloses illuminating SLM array having a plurality of SLMs (Fig. 1), manually adjusting a position of at least one SLM (para 0023-27) from a first plane to a second orientation in a second plane which is parallel to the first plane (Fig. 2-5, the abstract), transmitting light from the SLM array through an optical system (7) and exposing an object (9) with light from the

Art Unit: 2851

SLM array. Jain discloses adjusting the position of SLM to compensate for focal deviation which is the aberration (Fig. 1, para 0022). Jain discloses that the method is performed during an initial setup of the maskless lithography system and during periodic maintenance when a very high throughput, large-area maskless lithography system is required (para 0001).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jain.

Jain discloses the claimed invention as discussed above; however, Jain does not disclose receiving exposure data at a plane of the object, determining corrective adjustment and adjusting SLMs. Jain discloses that the critical focusing distance must be calculated to reduce aberration (para 0022). Although Jain does not disclose receiving exposure data and determining the corrective adjustment, it would have been obvious to one of ordinary skill in the art at the time of the invention to perform and test exposure to determine the correct adjustment step or correct critical focusing distance required to make the adjustments to the SLM in order to reduce total focus deviation.

***Allowable Subject Matter***

Claims 5, 6, 8, 9, 11, 16, 17, 23, 24, and 26-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2851

Regarding claims 5, 16, and 23, none of the prior art of record teach or discloses a method of correcting an aberration or a maskless lithograph system comprising adjusting SLM in a SLM array to an orientation which is tilted at an angle with respect to the first plane in combination with the limitations of claim 1, 14, or 23.

Regarding claims 6, 17, and 24, none of the prior art of record teach or discloses a method of correcting an aberration or a maskless lithograph system comprising adjusting SLM in a SLM array to an orientation which curves or bends in combination with the limitations of claims 1, 14, or 23.

Regarding claims 8, and 26, none of the prior art of record teach or discloses a method of correcting an aberration or a maskless lithograph system comprising a controller for controlling the adjuster or actively adjusting of SLM in combination with the limitations of claims 1, and 20.

Regarding claims 11, and 28, none of the prior art of record teach or discloses a method of correcting an aberration or a maskless lithograph system comprising an adjuster of a screw or adjusting of SLM using screws in combination with the limitations of claims 1, and 20.

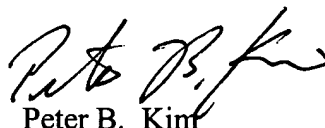
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 9:00 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2851

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Peter B. Kim", is positioned above the printed name.

Peter B. Kim  
Primary Examiner  
Art Unit 2851

March 15, 2007